MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE

Madanapalle-517325, Annamayya Dist., Andhra Pradesh, India.

MITS DEEMED TO BE UNIVERSITY

(Declared under section 3 of UGC Act, 1956 by Govt. of India - MoE)

www.mits.ac.in

Estd: 1998

A Report on

Hands on Workshop entitled

"IC Engine Dismantling & Assembly"

Organized by

Department of Mechanical Engineering

In association with

Institution of Engineers-INDIA Student Chapter- Mechanical Engineering

on 08-10-2025

Report Submitted by: P Mohammed Rizwan Ali, Assistant Professor, Department of Mechanical Engineering.

Coordinators Details: Mr P. Mohammed Rizwan Ali, Assistant Professor, Department of Mechanical Engineering & Dr Rupashree Ozah, Assistant Professor, Department of Mechanical Engineering.

Venue: IC Engines Lab(WB-005) Time: 10:00AM -4:00 PM

Mode of Conduct: Offline Attendees Count: 57

Objectives of the Workshop:

- Understand the make of an IC Engine
- To gain knowledge on IC Engine Dismantling and assembly procedure along with associated tools.
- To understand the Function of individual components.
- To learn about safety Protocols during handling of IC Engines in Automobiles.

Workshop Overview:

The One day workshop on “IC Engine Dismantling & Assembly” was conducted by the Department of Mechanical Engineering in association with Institution of engineers student chapter on 08-10-2025,10:00-4:00PM at WB-005(IC Engines lab). The main objective of this workshop is to equip

students with a clear picture on functioning of an IC Engine along with Dismantling and Assembly procedures of an IC Engine.

Mr M Gangadhar, Technical Officer cum Master Trainer at Andhra Pradesh state skill Development Corporation(APSSDC) was invited for the workshop as a resource person 57 students of 2nd year

Mechanical Engineering department attended the workshop and gained valuable insights related to the Automotive technology.

The program was formally started at 10:00 AM with a welcome address & introduction related to the sector, highlighting the need of such workshop by Mr. P Mohammed Rizwan Ali, Asst Prof- ME

Dept later handed over the session to Dr S. Baskaran for the inaugural address. Dr. Rupashree ozah in her talk gave a clear overview of different activities happening under institution of Engineers student chapter and encouraged students to join the IE(I) student chapter. Later Mr. Gangadhar, resource person for the day addressed students and explained how learning automotive technologies will be helpful to gain a job of desired package and he also highlighted the need of Automotive Engineers and opportunities in foreign countries. Dr I Arun and Dr Pruthvideep chaired during the inaugural session. After inaugural talk students were moved to WB-005(IC Engines lab) for the Practical session.

The workshop provided an in-depth exploration of the mechanical and operational intricacies of internal combustion engines, focusing on the systematic procedures required to dismantle, inspect, and reassemble engine components with precision. The workshop begins with a comprehensive overview of engine types, including the fundamental differences between two-stroke and four-stroke engines, followed by a detailed study of key components such as the cylinder block, piston assembly, crankshaft, camshaft, valves, and timing mechanisms. Emphasis is placed on safety protocols and the correct use of specialized tools such as torque wrenches, dial gauges, and

micrometers to prevent component damage. During dismantling, participants learn to methodically remove external and internal parts, taking care to preserve the integrity of critical surfaces and seals. The inspection phase involves precise measurement of components to assess wear, using instruments like vernier calipers and micrometers to evaluate parameters such as piston diameter, cylinder bore, and valve clearances against manufacturer tolerances. The cleaning process is covered extensively to remove carbon deposits and contaminants that affect engine performance. Reassembly instruction focuses on proper lubrication techniques, alignment of timing gears or chains, and adherence to specified torque values and tightening sequences to ensure optimal engine function and longevity. The workshop concludes with testing procedures such as compression testing and leak-down analysis, enabling participants to verify the effectiveness of their assembly and diagnose potential

issues.

Outcomes es:

- Participants were able to proficiently dismantle and assemble internal combustion engines by following systematic procedures and using specialized tools, ensuring no damage to critical components.
- Participants can accurately inspect and measure engine parts such as pistons, cylinders, valves, and crankshafts using precision instruments to assess wear and determine serviceability according to manufacturer specifications.
- Students learnt appropriate cleaning, lubrication, and torque techniques during engine reassembly to maintain component integrity, ensure proper fitment, and optimize engine performance.
- Students learnt about safety protocols to be followed while handling an engines.